N. A. Wood

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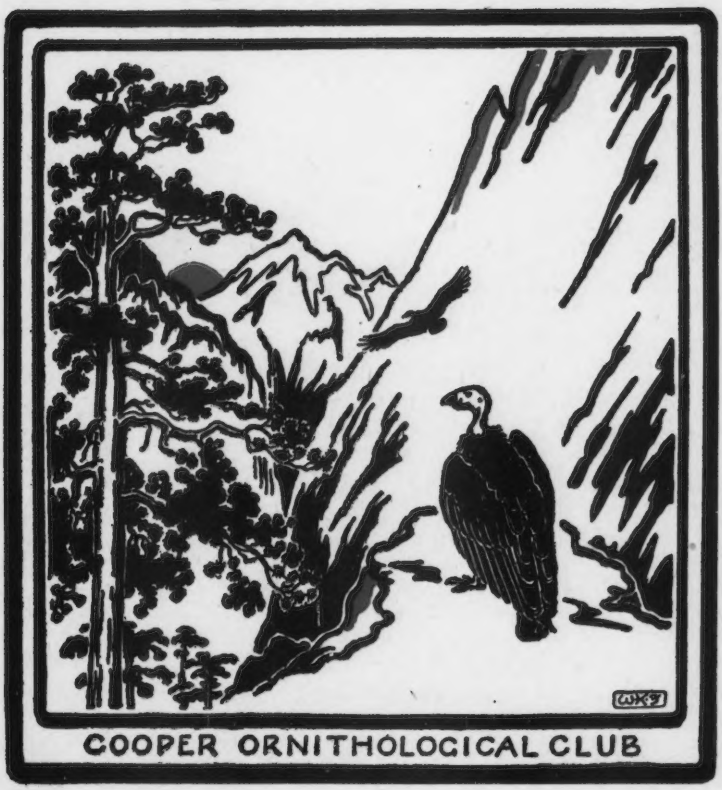

COOPER ORNITHOLOGICAL CLUB

THE CONDOR

A Magazine of Western Ornithology

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NOTES ON THE DEVELOPMENT OF YOUNG SCREECH OWLS

WITH FIVE ILLUSTRATIONS

By E. L. SUMNER, JR.

ON MAY 23, 1925, a female Southern California Screech Owl *(Otus asio quercinus)* and her brood of three young were discovered in a cavity about fifteen feet up in a rather small sycamore *(Platanus racemosa)* at Claremont, California (fig. 86). The entire family received bands, and although none of the youngsters has as yet been retaken, the old bird, no. 290928, was found at home on February 6, 1926. On May 28 of the same year another brood of three was banded; and the adult was still using the same cavity when visited the following February, 1927. By March 31, 1927, there was one egg, and when visited April 14 the nest contained a set of four which was moderately incubated. Two weeks later the eggs were upon the point of hatching, and as the object of this study was to observe the development of the young birds, a visit was made every other day throughout their nest life. The following report upon this family has been condensed from my field notes.

April 14, 1927. Female sitting upon four moderately incubated eggs. Weights of eggs (in grams): 19.9, 19.8, 19.0, 20.0.

May 1. Female in nest. Weights of eggs (in same order as above): 18.1, 17.8, 17.1, 18.1. The first and third are pipping.

May 3. Female present. Conditions unchanged except for a few more cracks in one of the eggs, inside of which the bird can be heard moving.

May 5. Female in nest. Three young hatched and about 2¼ inches long. Fourth egg unhatched. Weights: No. 295321, 23.6; no. 295320, 21.5; no. 295319, 20.7; no. 295318 (unhatched), 17.8.

May 7. Female covering the young. Eyes not yet open. "Egg tooth" prominent. Bill and claws bluish-gray. The youngsters whimper continually, and for the most part lie prone upon the ground. When placed upon the scale pan, however, they are able to stand up, although somewhat weakly. The first three to hatch are now about 3⅜ inches in length, the fourth being 2¼ inches. Weights: No. 295321, 36.2; no. 295320, 36.3; no. 295319, 33.9; no. 295318, 19.3.

May 9. Female present. General behavior of the young as before, as well as color of soft parts. Down is about ⅜ inch in length. (See fig. 87.) A headless young Brewer Blackbird *(Euphagus cyanocephalus)* in the nest. Weights: No. 295321, 48.8; no. 295320, 51.2; no. 295319, 47.1; no. 295318, 26.3.

May 11. Adult in nest. When first taken from the cavity, all four young snap their beaks after the manner of the parent. Egg tooth no longer present on two of the birds and dropped off when touched in the case of the others. Length of first three about 3¾ inches, the fourth being 3 inches. Weights: No. 295321, 65.4; no.

295320, 63.9; no. 295319, 57.6; no. 295318, 32.4. No. 295319 has eyes partly open, and when touched on the bill it feebly bites at the proffered finger. However, although it can stand up to its full height, and move forward a few steps, the ability to distinguish objects seems lacking.

May 13. Female present, but contrary to her usual custom offered no resistance. The weather is warm, and in order to escape the heat she has squeezed behind an upthrust piece of wood which separates her from the young. The eyes of the first three young are now open and the panting youngsters make strenuous efforts to escape when exposed to the hot sun. Weights: No. 295321, 83.6; no. 295320, 78.2; no. 295319, 73.0; no. 295318, 46.5. Lengths, in same order: 4⅝, 4½, 4½, and 3½ inches.

Fig. 86. HOME SITE OF THE FAMILY OF SOUTHERN CALIFORNIA SCREECH OWLS WHICH WERE MADE SUBJECTS OF THE STUDY DETAILED IN THE ACCOMPANYING TEXT.

May 15. Nest visited at dusk. Young very quiet, like so many inanimate lumps, in contrast to their lively behavior at the previous visit, when exposed to the hot sunlight. Weights: No. 295321, 87.2; no. 295320, 101.7; no. 295319, 81.9; no. 295318, 67.5. Both adults were flying about in the tree, and while weighing the young I

was struck several times on the top of the head as they swooped by. These hostilities were for a while without any harmful results; but as I was returning the youngsters to the nest, one of the old birds, presumably the female, struck me on the chest, and after fluttering down to my knees, flew to a nearby branch and prepared for another onslaught. By this time the light had become so dim that it was impossible to evade these attacks, and after receiving the next blow squarely in the eye, it seemed advisable to retreat before the consequences became serious.

Fig. 87. YOUNG OF SOUTHERN CALIFORNIA SCREECH OWL IN CHARACTERISTIC POSE WHEN THREE TO FIVE DAYS OLD.

May 17. Female in nest as usual. The young are quiet, since the heat is not great. No. 295319 hoots feebly, in a tone similar to that of the adult, but the rest are silent. Weights: No. 295321, 95.8; no. 295320, 93.5; no. 295319, 86.5; no. 295318, 68.7. Lengths, in same order: 4¾, 4¾, 4¾, and 4 inches.

Fig. 88. YOUNG OF SOUTHERN CALIFORNIA SCREECH OWL IN PUFFED-OUT POSE WHEN SOME FOUR WEEKS OLD.

May 19. Adult present. All four young snap their beaks when handled, and can stand up and look about; but as yet they make no definite efforts to escape. Weights: No. 295321, 110.0; no. 295320, 111.7; no. 295319, 107.5; no. 295318, 92.3. Lengths, in same order: 5, 5, 5¼, and 4¼ inches. No. 295319 hoots continually and

is the most aggressive of the four. When a finger is advanced, it sways from side to side with wide-open eyes and snapping bill, after the manner of the adults. The eyes of no. 295318 are just opening, and are as yet mere slits.

May 21. A headless young Brewer Blackbird, one-half grown, in the nest, but the adult owl is absent. All four young snap their bills as soon as my hand enters the cavity, but when on the ground no effort is made to crawl away, and when not disturbed they lie motionless wherever laid. Beaks gray, becoming lighter toward the tips; claws slaty-gray, becoming blackish at the points. Weights: No. 295321, 111.2; no. 295320, 105.3; no. 295319, 103; no. 295318, 78.2. Lengths, in same order: 5¼, 5¼, 5¼, and 4¾ inches. No. 295319 is more aggressive than ever, and squawks continually. Eyes of no. 295318 not yet widely open.

Fig. 89. YOUNG SOUTHERN CALIFORNIA SCREECH OWL, WITH TIGHTLY COMPRESSED PLUMAGE WHEN FRIGHTENED BY PASSING TRUCK. SHOWS ALSO WEIGHING APPARATUS.

A comparison of the above figures with those of the previous visit shows a failure to increase in weight which is quite unaccountable. Although all seem perfectly healthy, only no. 295321 has gained at all, and this to a negligible degree, while the other three youngsters have actually lost, to an extent which varies from four percent in no. 295319 to fifteen percent in the case of no. 295318.

May 23. From this time on, the adult is no longer found in the nest. Weights: No. 295321, 112.1; no. 295320, 105.3; no. 295319, 107.2; no. 295318, 78.9. No. 295319 is more aggressive and noisy than ever, biting at my fingers and shrinking back with open beak when touched. Conditions with regard to weights much as before except that no. 295319 has commenced to gain.

May 25. Like the adult, these young owls defecate copiously when handled,

probably from nervous excitement. Claws now a dark slate color. Weights: No. 295321, 132.9; no. 295320, 102.2; no. 295319, 137.3; no. 295318, 101.5. When set down in the grass no. 295320 made for cover. No. 295319 increasingly vigorous, but still harmless. No. 295318 snaps bill but is less obstreperous than the others. With the exception of no. 295320 all show a marked increase in weight.

May 27. While one of the youngsters was being photographed the remaining three crawled into the dry grass, and although none traveled over four feet, they were all completely hidden. Weights: No. 295321, 138.4; no. 295320, 117.9; no. 295319, 124.1; no. 295318, 110.5. Examination of these weights shows a decline for no. 295319, although the others, including no. 295320, are upon the increase.

May 29. A headless immature House Finch *(Carpodacus mexicanus frontalis)* found in the nest; also an adult female of the same species, with the brain eaten away. Weights: No. 295321, 143.5; no. 295320, 126.9; no. 295319, 128.5; no. 295318, 123.9. No. 295319 attacks my outstretched finger pugnaciously, using beak but neither wings nor feet. Hoots as before, swaying from side to side with wings outspread. When placed on the sunlit road it hopped and flapped energetically for shelter. All four birds are once more gaining weight.

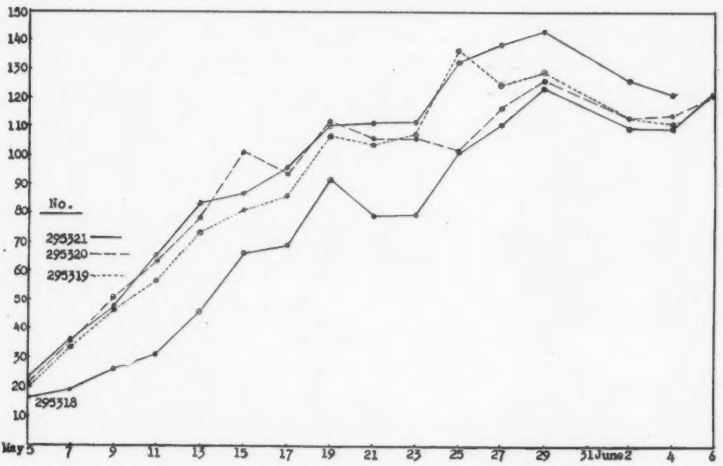


Fig. 90. GRAPH SHOWING FLUCTUATIONS OF WEIGHTS (IN GRAMS) OF YOUNG SOUTHERN CALIFORNIA SCREECH OWLS WITH ADVANCING AGE.

May 31. No visit made.

June 2. Two of the youngsters had climbed up the sides of the cavity past the entrance, and were some three feet from the bottom of the nest. When disturbed in any way these birds puff out their feathers, giving them a deceptively bulky appearance, as illustrated in figure 88. Figure 89 shows no. 295321 when startled by a passing truck. At the unaccustomed sound every feather has relaxed, causing the bird to appear much thinner than usual. Weights: No. 295321, 126.1; no. 295320, 113.9; no. 295319, 113.3; no. 295318, 109.2.

June 4. This time all the youngsters except no. 295321 were found clinging above the nest opening. The birds can still be handled with safety, although there is a definite tendency to use beak and claws for defense. Weights: No. 295321, 122.2; no. 295320, 114.3; no. 295319, 111.7; no. 295318, 109.5. Nos. 295321 and 295319 show a loss of weight, while the other two have not gained appreciably.

June 6. Nos. 295321 and 295319 no longer present. No. 295318 hooted for the first time, and in a weak, wheezy tone. When fighting it lies upon its back and

uses its claws, which can inflict considerable pain, although unable to draw blood. Both birds show a considerable gain since the preceding visit. Weights: No. 295320, 121.7; no. 295318, 122.8.

After this the nest was not visited again, but for more than a week the old birds could be heard after dark, calling back and forth in the vicinity.

In closing, two features seem to deserve special mention. One is the fact that after the eggs had first begun to pip, more than three days elapsed before the time of hatching. The other is the unaccountable fluctuation in the weights of the youngsters, as illustrated by the graph (fig. 90). A similar, although less pronounced, variation has been observed by the writer in the development of young golden eagles, but it is not possible to draw conclusions regarding its significance without further data.

Pomona College, Claremont, California, January 28, 1928.

THE WOODPECKERS OF LINCOLN COUNTY, MONTANA

WITH THREE ILLUSTRATIONS

By WINTON WEYDEMEYER and DONALD WEYDEMEYER

LINCOLN County, in the extreme northwestern corner of Montana, offers an excellent oportunity for an ecological study of the woodpeckers. Approximately 2,290,000 acres, or 98 per cent, of this area originally was heavily forested. At the present time about 150,000 acres have been cut over, and lumbering operations undoubtedly will be continued for many years in the future, as the county contains some of the finest stands of timber in the state. In 1925 only 4.2 per cent of the total area was in farms.

As the timber is gradually removed and more land is brought under cultivation and into use for pasture, the numbers and habits of the woodpeckers change. In order to furnish a definite comparison for later studies in the region, and thus to permit of more or less correct conclusions regarding the influence of timber cutting on the different species, this summary of their present status is given. As definite breeding dates for woodpeckers in Montana are almost lacking, some of the nesting records obtained in Lincoln County by the writers are also included.

A brief description of the physiography of this region is desirable. Ranging in altitude from 1800 to 8640 feet above sea level, the county embraces areas in the Transition, Canadian, Hudsonian, and Alpine-Arctic zones. The only naturally treeless section at low elevation is the Tobacco Plains, where biotic characteristics approach those of the Upper Sonoran zone. The entire area is well watered with mountain and glacial lakes, and innumerable streams.

Some idea of the comparative abundance of the different species of woodpeckers, which are considered separately below, is given by the following table compiled from the writers' notes.

COMPARATIVE ABUNDANCE OF THE DIFFERENT SPECIES OF LINCOLN COUNTY WOODPECKERS

Number of days seen during representative periods

SPECIES	EASTERN HALF		WESTERN HALF	
	June 4 to 30, July 23 to Sept. 16, 1922 83 days	June 15 to Sept. 15, 1923 93 days	June 15 to Sept. 15, 1924 93 days	June 15 to July 4, 1924 20 days
Northern Hairy	75	90	41	11
Batchelder	5	34	3	1
Arctic Three-toed	22	24	7	2
Alaska Three-toed	0	0	1	0
Alpine Three-toed	10	2	4	3
Red-naped Sapsucker	50	68	12	4
Williamson Sapsucker	1	2	0	0
Northern Pileated	50	59	41	7
Lewis	6	50	36	4
Red-shafted Flicker	82	93	91	20

Dryobates villosus leucomelas. Northern Hairy Woodpecker.

An abundant permanent resident throughout the county, intergrading with *monticola.* Breeds most commonly in the cut-over lands of the river valleys, in the Transition and the lower part of the Canadian zone. It occurs more commonly in the sparsely-timbered higher mountains than in the heavily-forested hills of the central Canadian zone, ranging to the timberline.

In the valleys it is most numerous, during summer, in forests containing a large percentage stand of western larch *(Larix occidentalis)*. The next trees in attractiveness seem to be Douglas fir *(Pseudotsuga taxifolia)*, western yellow pine *(Pinus ponderosa)*, and Engelmann spruce *(Picea engelmanni)*, in the order named. In the Hudsonian zone it frequents trees of white-bark pine *(Pinus albicaulis)* and

Fig 91. MIXED BROAD-LEAF AND CONIFER WOODS, TRANSITION ZONE. COMMONEST BREEDING WOODPECKERS: RED-NAPED SAPSUCKER, RED-SHAFTED FLICKER, BATCHELDER, NORTHERN HAIRY, LEWIS. ARCTIC AND ALPINE THREE-TOED, AND NORTHERN PILEATED ALSO OCCUR.

alpine larch *(Larix lyallii)*. The species is noticeably rare or absent in forests containing nearly pure stands of western white pine *(Pinus monticola)*, arborvitae *(Thuja plicata)*, or lodgepole pine *(Pinus contorta)*, except where the woods have been logged or injured by fire.

During winter this woodpecker is commonly found in mixed broad-leaf and conifer associations along streams, but it is most abundant at that season in the larch woods of the valleys. At all times of the year it is more common about farms and wooded pastures, and in woods where lumbering is being carried on, than in heavy forests and unsettled parts of the mountains and valleys.

Fig. 92. CANADIAN ZONE FOREST, CEDAR LAKE. ALPINE FIR AND LODGEPOLE PINE WOODS, WITH SOME WHITE PINE AND ENGELMANN SPRUCE. COMMONEST WOODPECKERS: NORTHERN HAIRY, RED-SHAFTED FLICKER, ALPINE THREE-TOED. ARCTIC THREE-TOED, NORTHERN PILEATED, BATCHELDER, AND RED-NAPED SAPSUCKER ALSO OCCUR.

In abundance this woodpecker ranks next to *Colaptes cafer collaris,* which is the commonest species. Individuals may be seen within its range on any day of the

year. A close observer, during a day's observation in woods of larch and fir, will ordinarily see from six to twelve adult birds.

In Lincoln County this species uses a wide variety of nesting sites. Of eight nests included in our records, three were in live aspens; one in a live cottonwood; one in a live larch; one in a dead larch; one in a dead Douglas fir; and one in a woodpecker nesting box.

Our dates would indicate a rather late nesting on the part of this species, in this locality: May 29, 1921, one egg and two newly-hatched young; June 26, 1921, young; July 27, 1921, one young on wing; June 10, 1922, half-grown young; June 17, 1922, nearly-grown young; June 17, 1922, half-grown young; July 9, 1922, young on wing; June 4, 1923, three-fourths-grown young; July 1, 1923, nest in preparation; July 6, 1923, young on wing; June 13, 1924, nearly-grown young. These records include nests or young in the Transition, Canadian, and Hudsonian zones, in altitudes from 2950 to 5400 feet.

Dryobates villosus monticola. Rocky Mountain Hairy Woodpecker.

This form of the Hairy Woodpecker intergrades with *leucomelas* throughout most of the county, appearing to be relatively more common in the Transition zone than in the Canadian. Apparently typical individuals are sometimes seen, but more often the birds show signs of intergradation. Some of the nests given in the preceding section for *leucomelas* were evidently of intergrades between the two forms.

Dryobates pubescens homorus. Batchelder Woodpecker.

A rather rare permanent resident, irregular in winter. Occurs throughout the county, but is rare at high elevations. It frequents mixed broad-leaf and conifer woods along the lower streams, where it undoubtedly breeds in preference to other locations. During winter it is often seen about farmsteads and pastures, and in bordering woods of Douglas fir, yellow pine, and larch. In the Canadian zone it occurs sparingly in lodgepole pine and alpine fir *(Abies lasiocarpa)* woods, usually along streams.

In the western half of the county, an observer may consider himself fortunate to see an individual of this species twice a week. In the eastern portion, during July and August, along Transition zone streams, one or two birds may be seen nearly every day.

We have obtained no definite nesting dates for this species, although it evidently breeds in suitable locations. On July 22, 1923, a brood of young on the wing was seen near Fortine in woods of spruce and aspen, in the Transition zone, at 2960 feet altitude.

Picoides arcticus. Arctic Three-toed Woodpecker.

A fairly common resident, occurring throughout the county, though more commonly in the eastern than in the western part. It is found most frequently in Transition zone woods that have been logged or burned over. In virgin forests it occurs sparingly in yellow pine woods at low elevations; more commonly in mixed broad-leaf and conifer, and Douglas fir, associations; and rarely in alpine fir and lodgepole pine woods of the higher mountains, in the Canadian zone. Its favorite feeding trees are Douglas fir and western larch.

Within its range this species may be seen about three times a week in the central eastern part of the county, where there are large cut-over areas; and five or six times a month in the remainder of the county.

A nest containing young about a week old was found May 25, 1923, in a larch tree near Fortine, in the Transition zone.

Picoides americanus fasciatus. Alaska Three-toed Woodpecker.

A very rare resident. During five years we have seen this species but six

Fig. 93. HUDSONIAN ZONE, WITH ALPINE-ARCTIC IN BACKGROUND, SHOWING PART OF BLACKWELL GLACIER; NEAR LIBBY. BREEDING WOODPECKERS: RED-SHAFTED FLICKER, NORTHERN HAIRY. THE ALPINE THREE-TOED AND THE RED-NAPED SAPSUCKER SOMETIMES RANGE INTO THE LOWER BORDER OF THIS ZONE.

times, all in autumn or winter: October 14, November 28, December 5, December 17, 1922; September 15, 1924; and December 24, 1925. These records were all obtained in Transition zone woods of Douglas fir, western larch, and yellow pine.

Picoides americanus dorsalis. Alpine Three-toed Woodpecker.

A regular but rather uncommon permanent resident in the mountainous parts of the county. Unlike *arcticus,* this species prefers dense, virgin forests to cut-over woods and open woodland pastures. It ranges throughout the Canadian zone, upward into the borders of the Hudsonian zone, and downward into the denser forests of the Transition zone. It is not often seen in cut-over woods, nor near farmsteads.

In the higher elevations, this woodpecker may be found in white pine, lodgepole pine, alpine fir, and Engelmann spruce forests. In the Transition zone, it shows a preference for spruce woods, with larch and yellow pine forests as second choice. In the Canadian zone, this species is somewhat commoner than *arcticus;* in the Transition zone, it occurs only about one-third as frequently as does the larger bird.

Sphyrapicus varius nuchalis. Red-naped Sapsucker.

A common summer resident in the Transition zone, and in the lower borders of the Canadian. It occurs most abundantly and typically in mixed broad-leaf and conifer associations along streams, where it nests regularly. It ranges less commonly into virgin forests of fir, larch, yellow pine, and hemlock *(Tsuga heterophylla)* in the valleys; and into arborvitae, lodgepole pine, and spruce woods of the foothills. Occasional birds are seen in alpine fir and spruce woods upward to the lower borders of the Hudsonian zone.

Like the Hairy and Arctic Three-toed woodpeckers, this species is not driven from its normal range by moderate lumbering, as it occurs even more commonly in slashings than in untouched forests of the same type. In burned-over areas, however, the Red-naped Sapsucker is relatively much less common than the other two species named.

As elsewhere in the state, this bird in Lincoln County nests most commonly in live aspens. Our records for this area include four nests in live aspens, one in a live larch, and one in a dead Engelmann spruce. These nests were all in the Transition zone, near streams. Three of the nests in aspens were in a single tree, in successive years.

Nest-hole preparation usually commences immediately upon the arrival of the birds in the spring, about April 20. As indicated by the following records, eggs are evidently laid during the latter half of May. May 29, 1921, eggs; June 30, 1921, large young; June 13, 1922, half-grown young; June 30, 1922, nearly-grown young; July 9, 1922, young on the wing; June 3, 1923, eggs; June 19, 1925, young.

Sphyrapicus thyroideus. Williamson Sapsucker.

A rare summer resident. This seems to be the status of the species throughout its range in the state, as there are only a few records of its occurrence. Our records in Lincoln County are the following: June 13, 1921, pair; August 31, 1922, male; July 1, 1923, pair; August 23, 1923, pair. These birds were all seen at an altitude of about 3000 feet, in the Transition zone near Fortine, in cut-over woods of larch, fir, and yellow pine.

We have not found the species nesting, but it probably does so in suitable locations. On June 13, 1925, a pair was found nesting under similar conditions along the Hell Gate River, near Missoula.

Phloeotomus pileatus abieticola. Northern Pileated Woodpecker.

A common permanent resident in all the lower portions of the county. Evi-

dently this species enjoys a wider zonal range in Lincoln County than in the state in general. Aretas A. Saunders states that this woodpecker occurs regularly only in yellow pine forests of the Transition zone (Pacific Coast Avifauna Number 14: A Distributional List of the Birds of Montana, pp. 22, 77). In Lincoln County, at all seasons of the year, the species is most common in woods containing a heavy mixture of western larch, irrespective of the occurrence therein of yellow pine. Larch occurs throughout the Transition, and most of the Canadian, zone, from 1800 to 5400 feet altitude. No birds have been observed in growths of alpine larch, in the Hudsonian zone, although individuals have been seen at the lower borders of this zone.

Next to western larch, this bird favors forests of yellow pine and Douglas fir. It occurs, but is not common, in mixed broad-leaf and conifer associations, in woods where Engelmann spruce is the predominating type, and in forests of hemlock and arborvitae. In cut-over larch woods containing a moderately heavy second-growth of several years standing, the species ranges as commonly as in virgin forests. Both in the Transition and the Canadian zone, it is relatively common in forests of western white pine.

In the Canadian zone this woodpecker is not so widely nor commonly distributed, although it may be found in suitable forest types to the border of the Hudsonian zone. It occurs wherever larch and white pine grow abundantly, and irregularly in woods of lodgepole pine, spruce, and alpine fir. In lodgepole pine woods, it has been found from an elevation of 6500 feet, in the Canadian zone, to 2000 feet, in local stands of the tree in the Transition zone.

In present abundance, this species ranks third among Lincoln County woodpeckers, being outnumbered only by the Red-shafted Flicker and the Northern Hairy Woodpecker.

There appear to be no records of the nesting of this species in Montana. Nesting holes may be seen, in Lincoln County, in dead larches, yellow pines, and white pines. A number of years ago, we observed a nest containing eggs in a larch felled for firewood, but have no record of the date.

Asyndesmus lewisi. Lewis Woodpecker.

A common summer resident throughout most of the Transition zone. Its occurs most regularly in mixed broad-leaf and conifer woods in river valleys, and in open forests of yellow pine along the foothills. It rarely ranges into the higher mountains, although we observed one individual in a Canadian zone forest of lodgepole pine and alpine fir, at an altitude of 6160 feet. In cut-over or burned woods, it ranges to a higher elevation than in virgin forests.

In the eastern part of the county, this woodpecker is most common around farms and slashings, and in the more open woods of fir, larch, and yellow pine. Near Libby, in the western part, it seems to prefer creek-bottom woods of aspen, spruce, and cottonwood.

For nesting trees, the species exercises a wide range of selection. Of the four nests included in the following records, two were in larch stubs, one in a dead cottonwood, and one in a live yellow pine. Elsewhere we have found nests also in dead firs. These nests were in the Transition zone, at elevations between 2000 and 3100 feet: July 2, 1923, eggs; July 13, 1923, nearly-grown young; June 17, 1923, young on the wing; June 22, 1924, young; July 1, 1924, large young outside nest, on the tree. A great variation in the date of nesting is shown.

Colaptes cafer collaris. Red-shafted Flicker.

The most abundant and widely-distributed of Lincoln County woodpeckers. Occurs throughout the entire county, except in the Alpine-Arctic zone. It is the only woodpecker regularly occurring in the interior of the Tobacco Plains district. It is normally a summer resident, but many individuals winter in the valleys.

The Flicker is most abundant about farms and in cut-over woods, nesting commonly near barnyards and in pastures. An observer will note fewer and fewer individuals as he passes from cultivated farms into stump-lands; from there to virgin forests of fir, larch, and yellow pine; thence into the lodgepole pine and white pine woods of the lower part of the Canadian zone; and onward into denser forests of alpine fir, spruce, and arborvitae. But he will find the birds increasing in numbers on the rocky mountain slopes and upward through the Hudsonian zone, where the species ranges to timberline. In common with several others of the woodpeckers, the Flicker readily adapts itself to the results of conservative timber cutting, nesting even more abundantly in lumbered regions than in untouched forests.

Within its commonest range, this species nests most frequently in Douglas fir dead trees or rotting stubs. Of twelve nests found in the Transition zone within the county, ten were in fir stubs, one in a dead yellow pine, and one in a dying larch. The dates on these nests are the following. 1921: May 1, eggs; May 15, eggs; June 5, probably eggs; June 5, small young; June 10, young; June 12, young; June 20, young. 1922: July 1, nearly-grown young. 1923: June 14, young; June 22, large young. 1924: June 8, two nests, evidently containing young.

Moccasin, Montana, April 17, 1926.

THE NESTING OF HOWARD'S GROUSE

WITH ONE ILLUSTRATION

By J. R. PEMBERTON

THE WRITER pleads guilty to a charge of being slightly elated in announcing that on May 21, 1928, he took a set of five eggs of Howard's Grouse, the southernmost geographic race of *Dendragapus obscurus* and which has been given the name *howardi* by Dickey and van Rossem (CONDOR, XXV, 1923, p. 168). These birds inhabit the crests of some of the higher mountains from the southern extremities of the Sierra Nevada through the Tehachapi Range to Mount Pinos in southern Kern County, California. Mount Pinos is the southernmost recorded station. This high peak reaches an altitude of 8826 feet and is beautifully wooded with several species of pines and the silver fir. The grouse live only on the higher portions of the mountain and I believe have not been observed below 7800 feet, which is the elevation of the old sawmill. In a sense their range coincides with

Fig. 94. NEST AND EGGS OF HOWARD'S GROUSE.

the areas where the silver fir reaches its best development. It is not known whether eggs of this race have been collected in other parts of the bird's range, but it seems certain that this set is the first to be taken on Mount Pinos.

The upper part of Mount Pinos consists of a rather gently rolling table land. The automobile road ends at an altitude of 7800 feet, and in a walk of two miles the summit, 8826 feet, is reached. The mountain is really a broad ridge with an exceedingly steep north slope which falls 3800 feet in a distance of three miles to San Emigdio Creek. This creek runs in an east and west valley paralleling the longer diameter of Mount Pinos.

Egg collectors in southern California have been unable to figure the date on which eggs should be looked for. Most of us have been searching during the last

week in May or in early June. The birds at this time have been heard hooting quite commonly on the flatter upper part of the mountain, and searching has been conducted there. On June 6, 1927, O. W. Howard, for whom the bird is named, found a grouse chick only a few days old at an altitude of 8400 feet on this upper flat part of the mountain, and at that time many birds were heard hooting in that locality. This find enabled us to place the best date for eggs at about May 10. This year, Dudley DeGroot and the writer spent May 21 looking for eggs, being unable to make the trip earlier.

The interesting discovery was made that at that time no birds could be located on the higher part of the mountain, while well down on the cliff-like north slope many hooters could be heard. We believed that the hooters were near the sitting females, so we spent our time clambering about on this steep slope. Many tons of rocks were rolled down but no birds could be flushed. Finally, as I was about ready to give it up and about 200 feet below the rim of the steep slope at about the 8200 foot level, I flushed a female at a distance of about 50 feet and immediately saw the eggs. The bird left with a great whirr, lit on the lowest branch of a large pine about 100 feet distant, clucked a few times as she walked to the end of the limb, and then flew noiselessly downhill. The location was near a point where a hooter had been circling all day and although he moved his location many times it was now evident that he had been in sight of the sitting female all the time.

The nest was in clear open ground and without the slightest cover for the eggs. A depression less than an inch in depth seemed to have been scratched out of the dry sandy soil and lined rudely with bits of pine bark, a few needles and vegetable trash. Many feathers lay loosely with the eggs. It was a poor excuse for a built nest and was, rather, a simple resting place for the eggs.

The five eggs were nearly ready to hatch and the embryos had feathers an inch long. They resemble miniature turkey eggs but with larger spots. The ground color is light buff while the spots are auburn, using Ridgway's *Color Standards and Nomenclature*. The more prominent spots are 2 and 3 millimeters in diameter and one egg has two spots 8 and 10 millimeters in diameter. The measurements are 49 x 36, 49 x 37, 50 x 36, 51 x 36, 51 x 37; the average is 50 x 36.5. Grinnell, Bryant and Storer in *Game Birds of California* give the average size of 12 eggs of the nearest relative of this bird, the Sierra Grouse, as 51.6 x 35.5.

I believe the following generalizations can be made. Howard's Grouse nest on Mount Pinos during the first week of May, and full sets will be found before the 15th. The nests are fairly well down on the steep north slope and placed in entirely open ground in sunny spots well covered from the distance by observation trees. Nests ought to be found by search near where hooters are active. In early May the snow banks will eliminate all unlikely ground. As soon as the young are able to walk they are led to the flatter upper slopes of the mountain where there is good cover and more food. It is obviously unsafe to attempt a statement concerning the number of birds which live on Mount Pinos, but one can say that there are not many and I believe that the number is less than one hundred.

Beverly Hills, California, September 10, 1928.

THE SPECIES AND SUBSPECIES OF THE FRINGILLID GENUS *PASSERELLA* SWAINSON

By JEAN M. LINSDALE

AN ANALYSIS of variation in the Fox Sparrow *(Passerella iliaca)*, based primarily on a study of internal structure, and an examination of material in other closely related species have resulted in the conclusion, among others, that *Melospiza* Baird (1858) is so closely related to *Passerella* Swainson (1837) as to belong properly in the same genus. Accordingly, it has been proposed (see Univ. Calif. Publ. Zool., 30, 1928, p. 367) that *Melospiza* be merged with *Passerella*, the latter name having priority.

A considerable amount of evidence of a varied nature has been given (*loc. cit.*, pp. 261-2, 286, 291, 363-5, 367-8) which supports this conclusion. A brief summary of the facts which bear upon this question follows:

The two genera were established without their authors having sufficient material to determine properly the relation existing between them.

No constant differences in external structure could be found in the published diagnoses of the genera except with respect to length of outer toe compared with middle toe, and that character is highly variable in both groups; in fact the range in each group is equal to, or greater than, the hiatus between them.

There is no constant difference in coloration. Even the possession of the characteristic grouping of spots in the center of the breast is common to both groups.

The distribution of the two groups indicates an intimate relationship, as has been shown by Swarth.

The two groups have many common features as regards migratory habit, although the song sparrows tend to be more sedentary than the fox sparrows.

In respect to habits there is:

a. Close similarity in habitat choice, closely related races in both preferring stream sides.
b. So close similarity in songs that it is difficult to distinguish between some races.
c. Close similarity in type of nest and choice of nest site.
d. Similarity in eggs so close that they are nearly indistinguishable.

There is an almost complete intergradation in all the characteristics examined in the structure of the skull.

The extraordinarily great geographic variation exhibited by each of these groups is a characteristic which markedly separates them from any adjacent group of sparrows.

Should workers in systematic ornithology agree that the genus *Passerella* be constituted as herein suggested, new combinations of names for several races will be necessary. The names that have been proposed within the four species in the genus and which may prove worthy of recognition are given in the following list:

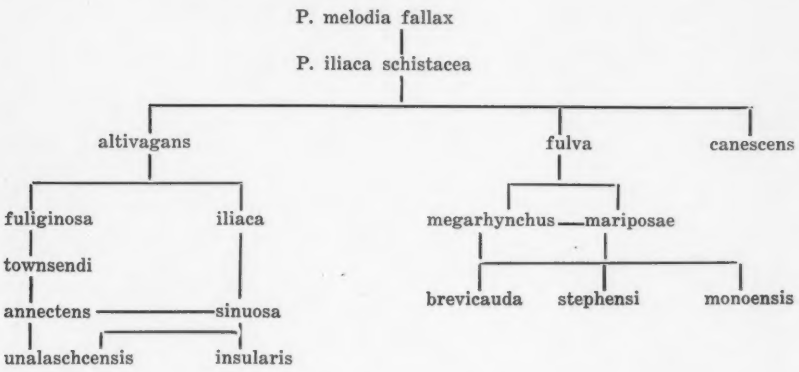
Genus *Passerella* Swainson
Subgenus *Helospiza* Baird
Passerella georgiana (Latham)
Passerella lincolnii gracilis (Kittlitz)
Passerella lincolnii lincolnii (Audubon)

Subgenus *Melospiza* Baird
Passerella melodia acadica (Thayer and Bangs)
Passerella melodia adusta (Nelson)
Passerella melodia atlantica (Todd)
Passerella melodia beata (Bangs)
Passerella melodia caurina (Ridgway)

Passerella melodia clementae (C. H. Townsend)
Passerella melodia cleonensis (McGregor)
Passerella melodia cooperi (Ridgway)
Passerella melodia coronatorum (Grinnell and Daggett)
Passerella melodia fallax (Baird)
Passerella melodia fisherella (Oberholser)
Passerella melodia goldmani (Nelson)
Passerella melodia gouldii (Baird)
Passerella melodia graminea (C. H. Townsend)
Passerella melodia heermanni (Baird)
Passerella melodia inexspectata (Riley)
Passerella melodia insignis (Baird)
Passerella melodia juddi (Bishop)
Passerella melodia kenaiensis (Ridgway)
Passerella melodia mailliardi (Grinnell)
Passerella melodia maxillaris (Grinnell)
Passerella melodia melodia (Wilson)
Passerella melodia merrilli (Brewster)
Passerella melodia mexicana (Ridgway)
Passerella melodia micronyx (Grinnell)
Passerella melodia morphna (Oberholser)
Passerella melodia pusillula (Ridgway)
Passerella melodia rivularis (W. Bryant)
Passerella melodia rufina Bonaparte
Passerella melodia saltonis (Grinnell)
Passerella melodia samuelis (Baird)
Passerella melodia sanaka (McGregor)
Passerella melodia santaecrucis (Grinnell)
Passerella melodia semidiensis (Brooks)

Subgenus *Passerella* Swainson
Passerella iliaca altivagans Riley
Passerella iliaca annectens Ridgway
Passerella iliaca brevicauda Mailliard
Passerella iliaca canescens Swarth
Passerella iliaca fuliginosa Ridgway
Passerella iliaca fulva Swarth
Passerella iliaca iliaca (Merrem)
Passerella iliaca insularis Ridgway
Passerella iliaca mariposae Swarth
Passerella iliaca megarhynchus Baird
Passerella iliaca monoensis Grinnell and Storer
Passerella iliaca schistacea Baird
Passerella iliaca sinuosa Grinnell
Passerella iliaca stephensi Anthony
Passerella iliaca townsendi (Audubon)
Passerella iliaca unalaschcensis (Gmelin)

Since the alphabetical arrangement of names in the list given above can not indicate any degree of relationship between races it may be desirable to present a diagram to show my own ideas of the relations which obtain between the subspecies of *Passerella iliaca* and between that species and *P. melodia*. The races *schistacea* and *fallax* have been chosen to head the diagram not because there are reasons to believe that these two represent the original or oldest subspecies in their respective species, although that is possible, but because they appear to be the races of the two species which are most closely related. The lines in the diagram connect races which, it seems probable to me, are most closely related. Incidentally, this diagrammatic arrangement illustrates the difficulties that may be encountered in any attempt to show relationship by columnar arrangements of names.



Museum of Vertebrate Zoology, University of California, Berkeley, August 22, 1928.

FROM FIELD AND STUDY

Observations on Pigeon Hawks in the Yosemite Region.—Although the Western Pigeon Hawk *(Falco columbarius bendirei)* is a comparatively uncommon winter visitant through the state at large, it is fairly common in that season in the region just west of the Yosemite National Park. During the winter of 1924 and 1925, scarcely a day passed when one or more of these little falcons was not observed flying either up or down the open, lower Transition-zone valley, by my home, six miles air-line east of Coulterville.

As a rule these hawks allow of close approach. They seem to prefer perches on the dead tops of oak trees in exposed situations generally overlooking meadows or fields. When approached, they show intense curiosity, craning their necks and twisting their heads in an effort to see the intruder to better advantage. If approached from behind they will sometimes turn around on their perches. When induced to leave a favorite perch, one will return often within a short time. There is generally a preferred perch, and also several other perches that are used only as lookout stations during hunting expeditions. A rather definite route is generally followed when the bird is hunting, as it flies from one prominent tree to another, stopping for a short while at each to survey the nearby, surrounding territory. I have shot three Pigeon Hawks from the top of the same black oak tree at different times, and two from another. Thus it would seem that a favorite perch for one Pigeon Hawk is also a preferred perch for others.

The rapid wing beats, long, tapering, sharply pointed wings, either bright slaty-blue (adult male) or dark brown (female and immature) back, and narrow white tail bands are distinguishing features of this hawk. The Sparrow Hawk might be confused with it in silhouette, when the two birds are found on common ground. According to my observations, the Sparrow Hawk nearly always teeters its tail after alighting, whereas the Pigeon Hawk does not do this.

Pigeon Hawks are bold and courageous in their attacks on prey, often killing birds larger than themselves. One, that I took, had just killed a Red-shafted Flicker which certainly could have put up considerable resistance. Another had a California Jay in its possession. In the Yosemite region, robins, juncos, and pipits seem to be preferred to any other food. One female, that had just eaten a junco and a pipit, had the partly digested remains of two other pipits in its stomach. A young male had eaten a robin and could scarcely leave the ground due to gorging. Another young male had eaten parts of a robin and a meadowlark, the latter being partly digested. An adult male was eating a robin when shot and another had just killed a flicker. A California Jay had fallen a victim to an adult male Pigeon Hawk and a robin to another. The last one taken had eaten a junco, a pipit and an unidentified bird, presumably an Audubon Warbler.

All of this hawk's food seems to be plucked to a considerable extent; but very little of the flesh is discarded unless possibly some of the entrails. Wings, bills and feet were all found in the stomachs.

When striking a bird, a falcon apparently delivers the blow with the front toes partially folded and the large rear talon dragging behind. An examination of fresh kills showed there had been an apparent raking action, tearing two deep gashes, generally severing the spinal column or neck. The flesh is also bruised and discolored. The bird is knocked down amid a cloud of feathers and then picked up, to be carried away to some retreat; or if too heavy it is eaten on the spot. A Pigeon Hawk seems to be able to carry a robin quite easily.

This hawk is capable of bursts of speed that fairly shoot it through the air, though the Duck Hawk and Prairie Falcon are more spectacular in their wild dashes. The Pigeon Hawk's method of approaching a bird is to drop from a perch to within a few feet of the ground and dash pell-mell, with wings whistling, at its quarry, be it a few feet or a quarter of a mile away. One dashed by me in our north field and was watched for nearly a quarter of a mile before reaching its prey. I have never seen one hover like a Sparrow Hawk, but did witness one catching dragon flies, early one fall, near Albany, Alameda County, California.

These hawks seem to be silent birds, for only twice have I ever heard one utter a sound. Once when two were fighting in mid-air, a spluttering *klee, klee, kleek, kleek* was given. One that I winged gave the same call as it came to the ground. They are generally solitary, and when two meet, a quarrel generally takes place immediately. The Pigeon Hawk will put a Sharp-shinned Hawk to rout if one should enter into the falcon's domain. This is quite the reverse of the Sparrow Hawk in a similar situation, as the Sharp-shin is the master of the Sparrow Hawk. One Pigeon Hawk was seen darting at a cat that was crossing the corner of a field. A mounted Great Horned Owl placed on a pole caused considerable consternation among the hawk population and brought three Pigeon Hawks during two days. At the end of this time, the owl was in such a bad way that the hawks paid little attention to it. The several species of hawks literally tore it to pieces. However, the Prairie Falcon and the Duck Hawk lord it over the Pigeon Hawk. Whenever either of the big falcons approaches a tree in which one of the smaller species is perched, the latter departs before the former alights.

The following list is of Pigeon Hawks that I have collected in the Yosemite region:

1. Male adult, February 26, 1919, perched in black oak tree near field.
2. Immature male, October 16, 1920, flying after robins.
3. Adult male, December 19, 1921, perched in same tree as no. 1.
4. Adult female, October 6, 1924, perched on fence post and gorged.
5. Adult male, October 12, 1924, perched in same tree as nos. 1 and 3.
6. Immature male, November 16, 1924, perched in a very tall black oak.
7. Adult male, November 17, 1924, flying after a flock of pipits.
8. Immature male, December 16, 1926, perched in the same tree as no. 6.

The dark-colored females and immature males outnumber the slaty-blue adult males to such an extent that the latter is a rare bird in comparison, even in this locality where Pigeon Hawks are relatively common in winter.

All the above specimens were taken in the neighborhood of Dudley, Mariposa County, from three to six miles east of Coulterville, California, at approximately 3000 feet altitude. They were taken under varying conditions of temperature and weather. —D. D. McLEAN, *State Fish and Game Division, San Francisco, August 22, 1928.*

A Cardinal at Redlands, California.—A cardinal, a male in full plumage, was found dead in Sylvan Park, Redlands, on April 9, 1926, by Mr. Robert Adams, gardener of the park. Recognizing it as a rare bird, he turned it over to the writer for identification. The measurements and appearance suggested that it is the Arizona Cardinal *(Richmondena cardinalis superba)* rather than the Eastern Cardinal *(R. c. cardinalis)*. The measurements are: length, 230.8 mm.; wing, 99.4; tail, 113.0. The specimen differs from *cardinalis* chiefly in the lengths of wing and tail. The color pattern is that of *superba*, as the black of chin and lores does not meet across the forehead. The general coloration is pale, and the bill is very stout.

In response to a request for possible information about the bird, published in the *Redlands Facts* of April 12, 1926, Miss Ruth M. Smith of Redlands reported that she had seen the bird alive March 28 and April 4, on Sunset Drive, about two and one-half miles from Sylvan Park, where it was found on April 9. She saw it distinctly and heard it sing. If this was the same bird, it had been in Redlands at least two weeks, succumbing after nearly a week of rain.

The specimen was sent to Mr. Alden H. Miller for identification, and is now no. 52902 in the collection of the Museum of Vertebrate Zoology, University of California. It was not seen by Mr. Miller previous to the writing of his recent article (CONDOR, XXX, 1928, pp. 243-245).

Mr. Miller reports that upon close comparison the specimen is undoubtedly referable to *superba*. The great length of tail as well as all details of coloration agree with typical specimens from Arizona. He further notes that the appearance of the Arizona race in California again raises the question of the origin of the California cardinals. There is the possibility that *superba* as well as other races may contribute to the California cardinal population. However, no trace of this race within the state has been noted heretofore, and it still seems reasonably certain that the principal colony in the San Gabriel River bottom is composed of eastern birds.

The possibility of Arizona Cardinals straying across the desert barriers to the coastal region of California is suggested by the specimen now recorded; and yet, this bird, too, may have been brought in as a captive, from Arizona or Sonora, and so represent another case of artificial introduction.—C. H. ABBOTT, *University of Redlands, Redlands, California, August 6, 1928.*

Returns of Banded Gulls.—Between June 18 and June 28, 1927, Mr. Frank L. Farley made three trips to a small island in Bittern Lake, ten miles west of Camrose, Alberta, and banded over one thousand young California Gulls *(Larus californicus)* and Ring-billed Gulls *(Larus delawarensis)*. The proportion of Ring-billed to California was estimated to be about one percent. These birds were from six to ten days old at the time of banding. Some of the first to be banded were observed at Camrose, ten miles away, on July 1, when they were probably about three weeks old.

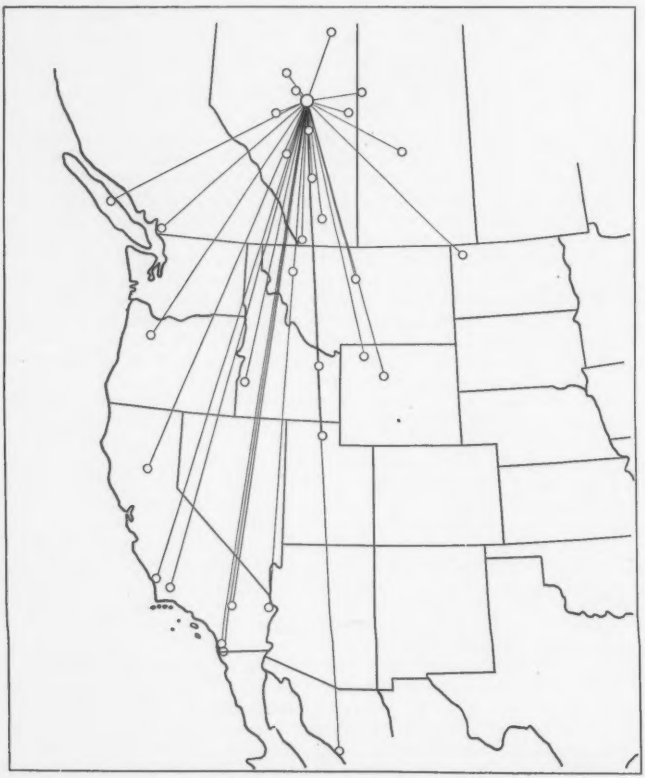


Fig. 95. MAP SHOWING RETURNS OF GULLS BANDED NEAR CAMROSE, ALBERTA.

The thirty-six returns of these birds that are shown in figure 95 are from the following places: Alberta: Lac La Biche, three returns, July 25, September 12, and October 13; Meanook, September 28; Armena, September 16; Bentley, September 10;

Calgary, two returns, September 16, and December 27; Pine Lake, September 18; Edgerton, September 26; Lake McGregor, two returns, October 10, and 13; Lethbridge, September 30; Waterton Lakes, October 20. Saskatchewan: Lloydminster, September 18; Mac Rorie, October 1. British Columbia: Vancouver, October 2; Comox, August 6. [This last is an interesting record; it is Ring-billed Gull no. 544527, and was collected by Major Allan Brooks, at Comox, Vancouver Island, just forty-five days after it was banded in central Alberta.] North Dakota: Battleview, September 26. Montana: Flathead Lake, September 14; Square Butte, October 16. Wyoming: Cody, October 24; Thermopolis, October 25. Idaho: Caldwell, October 2; Idaho Falls, November 1. Utah: Bear River, October 1. Oregon: Molalla, January 4, 1928. California: Needles, November 21; Gridley, December 11; Los Olivos, December 14; Barstow, December 27; Palm City, January 3, 1928; San Diego, January 27, 1928; Morro Bay, February 13, 1928. Sonora: Kino Bay, January 15, 1928.

I am indebted to Mr. Farley for permission to publish these returns.—JOHN MCB. ROBERTSON, *Buena Park, Orange County, California, August 7, 1928.*

On the Present Status of the Guadalupe Petrel.—Successive expeditions to Guadalupe Island during the past thirty years have returned with interesting representations of the island's fauna, and simultaneously have amassed evidence of the gradual decrease and final disappearance of many of the autochthonous bird species. The curtain has already gone down on the caracara, flicker, towhee, wren, and kinglet, and the results of the *Ortolan* expedition prepare us for the exit of the junco. Land birds have not suffered alone, and it has become patent that the Guadalupe Petrel is being, or has been, driven from the stage.

In 1922, the *Tecate* and, in 1925, the *Ortolan* visited Guadalupe, but the most careful search of the island failed to reveal the presence of Guadalupe Petrels. It is true that Mr. A. W. Anthony (Proc. Calif. Acad. Sci., 4th Ser., XIV, 1925, p. 287) in reporting upon the collections of birds and mammals obtained by the members of the *Tecate* expedition, writes: "In former years there was a considerable colony [of *Oceanodroma macrodactyla*] along the ridge in the pine growth at the north end of the island. . . . . In July of the current year the same ridge was explored and but little was seen to indicate a recent occupation of the nesting ground. A few burrows were seen, but they seemed to be very old. In 1892 dozens of dead birds were seen, where cats had torn away the breast, leaving wings and tail, enough to identify the species. Half a dozen similar dried bodies were seen last July, but so few that we were of the opinion that the colony was about finished."

None of the "dried bodies" was included in the collections, but the fragments of a wing collected at that time are in the museum of the California Academy of Sciences, and prove upon examination to belong to a bird of lesser dimensions than the Guadalupe Petrel. It would appear, therefore, that the colony was perhaps more nearly "finished" than Anthony believed, especially as no other specimens have been taken of late years, even at sea.

Aside from Anthony's report, the most recent definite record of the occurrence of the Guadalupe Petrel is from the pen of Dr. C. H. Townsend, who visited the island on the *Albatross* in 1911. He reports (Bull. Am. Mus. Nat. Hist., XLVIII, 1923, p. 6) the taking of two specimens of *Oceanodroma macrodactyla*, "Guadalupe Island, March 2-5."

I am indebted to Dr. Alexander Wetmore, Assistant Secretary of the Smithsonian Institution, and to Dr. Charles W. Richmond, of the U. S. National Museum, for the opportunity of examining one of these two examples. It is no. 305763, U. S. Nat. Mus., male, collected on March 2, 1911, by P. I. Osborn and C. H. Townsend. It has been compared carefully with the type of *O. macrodactyla* in the collection of the California Academy of Sciences, and with material generously loaned by Mr. W. E. Clyde Todd, Carnegie Museum, by Mr. S. C. Simms, Field Museum of Natural History, and by Mr. J. E. Thayer. In spite of the fact that a few of the central upper tail-coverts and some of the rectrices are lacking, the bird is readily recognizable, not as *Oceanodroma macrodactyla*, but as *Oceanodroma socorroensis*, this individual being one having indications of white on the lateral upper tail-coverts. I have not had an opportunity to examine the second specimen (presumably in the collection

of the American Museum of Natural History), taken on March 5; but I see no reason for believing that it differs specifically from the other.

After the above paragraphs were written, a letter was received from Dr. Robert Cushman Murphy, of the American Museum of Natural History, in which he states that he can "find no trace of an alleged specimen of *Oceanodroma macrodactyla*, collected by Dr. Townsend on Guadalupe Island in 1911." With regard to other examples of the species in the American Museum collection, Doctor Murphy says: "All of our adult examples of *macrodactyla* are labeled Guadalupe Island and were taken during only two different months—namely, March, 1897, and May, 1906. In addition to these, however, there are a male and a female in nestling plumage, collected by R. H. Beck in August, 1912. These appear to be true *macrodactyla*, ..." The identification of these nestlings is doubtless correct; nevertheless, August seems rather late for young of this species to be still down-clad.

It would seem, therefore, that the disappearance of this species, presaged by earlier visitors, and its imminence stressed by Thayer and Bangs (CONDOR, X, 1908, p. 103), has become an accomplished fact during the last twenty years.—M. E. MCLELLAN DAVIDSON, *California Academy of Sciences, San Francisco, September 17, 1928.*

Lewis Woodpeckers Nesting in Colonies.—Each season has its surprises and new incidents for the oologist and birdman and this year my experience with the Lewis Woodpecker *(Asyndesmus lewisi)* stands out as the most interesting. May 22, I was hunting around in the bottomlands along the Columbia River in Multnomah County, Oregon, and located a nest of the Lewis Woodpecker in the main trunk of a dead cottonwood or balm tree. It was out of my reach, unprepared as I was at the time; so I made arrangements with Mr. J. C. Braly to go with me and take his extension ladder.

We went out May 24 and I got up and opened the cavity but found I was too early. This was a real disappointment to me as I had expected a nice set of eggs from the nest; and I never had taken a set of this species even though the bird is not uncommon around Portland. However, we noticed a pair around another balm snag less than a quarter mile away; and, surely enough, I found another new nest hole and lots of fresh chips on the ground. We decided that we would let this one alone for a few days.

June 6, I got a good man with climbing irons and belt to go with me. He got up to the nest and opened it and obtained five eggs with incubation well under way. The snag he was on forked just below him and while at work he saw an old hole in it not over 18 inches from the one he opened first. He opened this second hole up and found three fresh eggs. While he was at work here I noticed one of the woodpeckers enter a knot hole much higher up the snag; so he climbed up there. This hole was pretty well up and the tree swayed in the wind in rather an alarming manner, but the man was game. It was a natural cavity and seasoned like bone so that it was hard to chop through the shell. There were two fresh eggs in this. He had captured two of the birds in the cavities and turned them out but I did not see over three at one time about the tree.

We then went over to my first tree and found that a new nest hole was started near the one I had opened too early. My companion came down and we started away, but upon looking back saw a bird disappear into the trunk way up above where we had been working. He went up again, and surely enough found a nest cavity containing three young and three eggs. While here he heard a noise up even higher, and upon getting up there found a cavity containing six young. We finished up the day by taking a pretty set of five from another snag several miles away, but there was but one pair here.

I was not aware that this woodpecker, or any other of the family for that matter, colonized; but here were three occupied nests in each of two trees and less than a quarter of a mile apart.—ED. S. CURRIER, *416 East Chicago Street, Portland, Oregon, August 3, 1928.*

Bird Notes from Oregon.—American Scoter. *Oidemia americana.* In the writer's experience, this is a rather rare and irregular winter visitor along the Oregon coast. The scarcity of published records leads me to record the following occurrences. On

December 30, 1926, an adult male was shot from the rocks at Cape Mears, Tillamook County, where it was feeding in the rough surf. During February, 1927, a number were seen off the Lincoln County coast just north of Newport, and during the fall of 1927, quite a migration occurred along the Curry County coast. On January 25, 1928, at least a dozen were identified among the flocks of *Oidemia deglandi*, *Oidemia perspicillata*, and *Histrionicus histrionicus pacificus* as they dove for food in the rough surf just off-shore. This scoter occasionally stops in Yaquina Bay, Lincoln County, and has been taken once, years ago, on the Lane County coast.

Pigeon Hawk. *Falco columbarius columbarius.* While some friends of mine were hunting wild geese near Arlington, Oregon, on December 22, 1927, a small hawk was seen perched on a fence post. Being familiar with most of the smaller predacious species of birds in this locality, this bird appeared to be something different, so it was shot and brought to me for identification. It proved to be a female of *F. c. columbarius.* The occurrence of this species is of sufficient rarity in Oregon to be worthy of note.

Black Pigeon Hawk. *Falco columbarius suckleyi.* On October 18, 1927, Mr. W. H. Riddle, while hunting near Seaside, Oregon, was successful in collecting one of these very rare hawks. Upon preparing the specimen, it proved to be an adult male, very fat; but unfortunately the stomach was entirely empty and no clue as to its food could be obtained.

Poor-will. *Phalaenoptilus nuttallii nuttallii.* This species is a regular summer resident over most of the arid Transition zone of eastern Oregon; but so far no published breeding records for the state have come to my attention. On June 15, 1926, in company with Dr. W. B. Bell and Mr. I. N. Gabrielson, I climbed to the peak of Hart Mountain, Lake County, Oregon. At about the 7000 foot level, while rounding a sage-covered slope, much to my surprise, I saw the nest, or rather I should say, the two pure white eggs of a Poor-will. The eggs, which proved fresh, were laid on the bare ground in a slight depression well shaded by a sage-bush, *Artemisia tridentata.* No attempt at nest building had been made. From my experience during May and June of the past several years, I am of the impression that this particular slope is a favorite haunt of this species; a number of these birds have been either seen or heard there during each of my several visits.

Wright Flycatcher. *Empidonax wrightii.* While collecting small birds along the coastal slope near Netarts Bay, Tillamook County, Oregon, on May 24, 1913, I saw a considerable number of *Empidonax* and collected one. This skin, with other specimens, was laid away for some time and not until Dr. Louis B. Bishop examined the birds was the identity of this specimen discovered. *E. wrightii* is a common enough breeding bird east of the Cascade Mountains in northern Oregon, but this is the first record of the occurrence of this bird near the coast in the northwestern part of the state.

Shufeldt Junco. *Junco hyemalis shufeldti.* On June 20, 1927, while I was riding along a Forest Service trail in the Wallowa National Forest, my attention was attracted to a loosely built bird nest about eight feet up in a lodgepole pine tree. Riding close to the tree, I noted a bird's tail projecting over the edge of the nest; and when I stood up in the stirrups to look into the nest, much to my surprise, a Shufeldt Junco flew off, revealing three beautiful spotted eggs that, from their shiny, leaden color, I took to be far advanced in incubation. About a mile up the trail, another nest at about the same height, and, also, in a lodgepole pine, was seen. It contained four eggs that in appearance were about to hatch. During the past twenty years I have examined about forty nests of this species, but these two are the only ones ever noted at any elevation above the ground. The forest at this point is an almost pure stand of lodgepole pine *(Pinus contorta)* at an altitude of about 5000 feet.

Rocky Mountain Orange-crowned Warbler. *Vermivora celata orestera.* On September 20 and 21, 1927, while I was camped with a government hunter on Hart Mountain, Lake County, Oregon, there occurred an unusual migration of small passerine birds, accompanied by more than the usual number of Cooper and Sharp-shinned hawks. Just back of our cabin, there is a considerable stand of willows, quaking aspen and second-growth yellow pine that afforded a fine feeding and resting ground for these migrants. Among the mixture of warblers, vireos, and flycatchers appeared several greenish-yellow birds that excited my curiosity. Two of these were collected,

on September 21, 1927, and proved to be typical specimens of *V. c. orestera*. Although this race has not heretofore been recorded from Oregon, there occur in the literature several sight records of *Vermivora celata lutescens* from the eastern part of the state which, I believe, properly should be referred to *orestera*. Again, on June 22, 1928, while I was camped at the same location, an unusual bird song was heard and after a careful search just after sundown three of these birds were seen and an adult male in breeding condition was collected.

San Joaquin Wren. *Thryomanes bewickii drymoecus*. Specimens of this race were first taken by the writer in Oregon in the Rogue River Valley in Jackson and Josephine counties during 1914 and 1915. Later, it was recognized, and specimens secured, east of the Cascade Mountains in the Klamath Valley (Keno, October 24, 1923). On October 27, 1925, while I was camped on Sprague River near the town of Bly, one was noted in a clump of dead willows, and on May 13 and 15, 1927, two of this species were found nearly a hundred miles eastward in South Warner Valley on Twenty Mile Creek near the California line. From data available, it would appear that this race of *Thryomanes* does not occur very far north into the state of Oregon east of the Cascades, and west of these mountains it comes only into the southern tier of counties. Its eastern limits are as yet unknown.—STANLEY G. JEWETT, *Portland, Oregon, July 6, 1928.*

Song Sparrows Endure a Severe Winter.—Whatever part the question of food supply may have played in the history of migration, instances of the suppression of the migratory instinct by artificial or abnormal feeding are not uncommon. Also it has been shown experimentally (Rowan, *British Birds*, XVIII, 1925, p. 296) that certain normally migratory species can endure the greatest rigors of an Alberta winter in outdoor captivity. The following instance, illustrating both points, seem to us sufficiently striking to record.

Last winter, in this district, was one of exceptional severity, especially in the matter of snowfall. After various preliminary storms snow began on October 29 and continued almost incessantly until November 16. By this time it was possible to snowshoe over the tops of all fences, and even the moose were floundering belly-deep. Snow continued to fall, though more intermittently, until in early December. Then the mercury suddenly rose, and it rained hard for two days before re-freezing, crusting, and clearing up. A worse combination from the birds' point of view could hardly be imagined.

As autumn passed thus brusquely into winter we were alarmed to find that four Rusty Song Sparrows *(Melospiza melodia morphna* Oberholser*)*, some of which had been pensioners at our traps since midsummer, while others had arrived late in the migration, did not depart with the rest of their kind, but continued to return to a supply of bird seed which was exposed in the shelter of an open wood-shed. Each frigid morning, with the thermometer sometimes as low as —28°F, or with the air almost solid with snow, the same four cheerful brown specks, in perfect condition, but looking sadly out of place in the formidable landscape, could be seen fluttering back and forth from the shed to the snow-laden timber in which they roosted. They never attempted to roost in the shed.

Since we ourselves planned to migrate on December 8 and there was no other human being for many miles, the situation became serious, and a seed "hopper" was evolved out of a long section of stove pipe, and tried out during the last ten days. This was finally left hanging in the shed with all the seed we had, which we feared might be just insufficient to carry the four birds through.

We returned on April 13. The hopper was empty, and we caught three of our sparrows the following morning and the fourth on the 17th. No other birds present here in winter will take this seed. The great quantity of "sign" left on and about the hopper was all uniform in size and consistency. The winter had not been excessively cold, but our registering thermometer had gone to —34°F, and had doubtless approximated that quite often. There seems to be no reasonable doubt that these birds wintered with impunity in this cold inland mountain range, at an altitude of 3000 feet, on the 53rd parallel.—THOMAS T. MCCABE and ELINOR B. MCCABE, *Indianpoint Lake, Barkerville, B. C., Canada, August 3, 1928.*

A New Chipping Sparrow from Central America.—Study of a series of Chipping Sparrows obtained in El Salvador in 1927, shows that the birds from the Pacific slope are distinct not only from those of the Atlantic side, but from those of southern Mexico as well. This new race we name and characterize as follows.

Spizella passerina cicada, subsp. nov. Salvador Chipping Sparrow.

Type.—Male adult; no. 18,618, collection of Donald R. Dickey; San José del Sacare, Dept. Chalatenango, El Salvador; altitude 3,600 feet; March 16, 1927; collected by A. J. van Rossem; original no. 11,484.

Subspecific characters.—Of the comparatively large-billed *mexicana-pinetorum* series. Very much darker than *Spizella passerina mexicana* Nelson. In general, of the same relative darkness as *Spizella passerina pinetorum* Salvin, but gray of rump and hindneck slightly paler and with the conspicuous blackish nuchal markings of that form represented only by short broken streaks on lateral parts of hindneck; reddish crown cap slightly paler ("burnt sienna"[1] instead of dark chestnut) and extending backwards onto occipital region and nape instead of being confined to pileum; gray of underparts slightly darker; back, scapulars and edging of wing feathers more richly colored than in any known form of *Spizella passerina*, with comparatively broad rufous or "cinnamon-rufous" areas between the black shaft streaks and the paler edgings.

Range.—Pine regions along the Pacific slope of the Cordillera in El Salvador.

Remarks.—The new race marks the southern limit attained by the species, and furthermore constitutes an apparently isolated colony; for *pinetorum* is known only from the Atlantic slope of British Honduras, Guatemala and Honduras, and *mexicana* has not been detected south of north-central Guatemala.

At San José del Sacare, the only station where it was found, the species was common, and in certain favored pine woods areas the chirring of the males was one of the most frequent sounds during the hotter hours of the day.

Specimens examined.—Spizella passerina mexicana: Series from southern Mexico, including the type, in Biological Survey collection, U. S. National Museum. *Spizella passerina pinetorum:* British Honduras: Sittee River, 3; Manatee District, 1 (Bangs collection). *Spizella pinetorum cicada:* El Salvador: Los Esesmiles, 13.—DONALD R. DICKEY and A. J. VAN ROSSEM, *California Institute of Technology, Pasadena, California, July 31, 1928.*

Banded Pintail Recovered in British Honduras.—The occurrence of the Pintail *(Dafila acuta tzitzihoa)* in the regions contiguous to the Caribbean Sea is sufficiently unusual to warrant special record, while the capture in this region of a banded individual is of exceptional interest and importance. It should be borne in mind that the normal winter range of this duck rarely extends south of the Valley of Mexico, although the species has been taken or observed as far south as Jamaica and Panama.

During September, 1927, Mr. Charles C. Sperry, of the Biological Survey, while investigating duck sickness in the vicinity of Klamath Lake, Oregon, banded about seventy Pintails, several returns from which were reported before the close of the shooting season. With one exception, the points of recovery were in Oregon and California, the most southern being a bird killed at Buena Vista Lake, California, on November 22.

At least one, however, made a remarkable flight, as number 227609, a drake, banded on September 5, near Keno, Oregon, was killed on December 23, 1927, near Belize, British Honduras, by Mr. Percy Dyer, who reported the capture to the Biological Survey. The record is of peculiar interest since the bird was banded within a relatively short distance of the Pacific coast and was retaken three months and seventeen days later, on the Atlantic coast. The direct air-line distance between the two points, is between 2,800 and 2,900 miles, while the distance actually covered in flight by this duck must have been considerably greater.—FREDERICK C. LINCOLN, *Biological Survey, Washington, D. C., August 28, 1928.*

A Bush-tit's Nest on a Pedestal.—The accompanying illustration shows a corner of the grounds between the Steinhart Aquarium and the Museum of the California Academy of Sciences. The enclosure at the right surrounds a tank occupied by living

[1]Colors in quotation marks are those of Ridgway, Color Standards and Color Nomenclature, 1912.

fur seals. On the corner post will be noticed a small potted shrub, one of many that from time to time have been placed upon these supports. During spring of the present year (1928) a pair of Bush-tits *(Psaltriparus minimus minimus)* built a nest in the center of this little bush between the upright stalks, and they successfully reared a brood of young therein. The young were in the nest at the time that the photograph here shown was taken. The nest was known to the Aquarium attendants, and when the time came for removal of this lot of plants, for replacement by others, the bush-tit's shrub was left untouched and alone, as shown in the picture, until the young had flown.

It is hard to understand in what respect this peculiar nesting site had any advantage whatever over such as would be provided by the numerous trees and bushes to be found on all sides near by; and the disadvantageous publicity of the site might be thought to be an overwhelming detriment. The nest was well hidden, and, despite its

Fig. 96. THE EXPOSED SHRUB ON THE CORNER POST CONCEALS AN OCCUPIED BUSH-TITS' NEST. PHOTO TAKEN AT THE CALIFORNIA ACADEMY OF SCIENCES, SAN FRANCISCO, MAY 26, 1928.

exposed position, it may be doubted whether it was seen by a single one of the hundreds of visitors that crowded about it daily, engrossed as was their attention by the seals in the water below.—H. S. SWARTH, *California Academy of Sciences, San Francisco, September 11, 1928.*

Record Sets of Eggs of California Raptores.—In the CONDOR (XXX, 1928, p. 250) Milton S. Ray describes several record sets of eggs of this order. I submit herewith further data along this line, surpassing even the records submitted by Mr. Ray.

Under date of March 17, 1928, Mr. H. W. Carriger, Mr. L. Stevens and the writer took what is believed to be the world's record set of the Golden Eagle *(Aquila chrysaetos)*, a beautifully marked clutch of five eggs. They were deposited in a nest which had been built the year previous and in which two young had been raised. The bird covered the eggs until we were within a very few feet of the nest which was placed in an absurdly small white oak not over twenty feet from the ground.

Upon blowing the set, one egg was found to be badly addled while the other four were fairly evenly incubated, probably less than a week along. The most sparingly

marked egg of the set was the least incubated, whereas the addled egg was the most heavily marked. It is our opinion that the addled egg was laid somewhat in advance of the other four, because of its apparent nest stain on one side.

The variation in size, of the five eggs, is perfectly normal, in comparison with the variation which is commonly found in sets of this species. Eggs numbered from 1 to 5 measure, respectively: 3.00 x 2.13, 2.82 x 2.21, 2.86 x 2.20, 2.94 x 2.19 (addled) and 2.96 x 2.17 inches. A set of eggs taken from this pair of birds in 1926 is similar in size, shape and coloration and measures: 2.93 x 2.24 and 2.87 x 2.24 inches.

In 1917, while on a collecting trip with that most venerable of ornithologists, A. M. Ingersoll, of San Diego, we had the good fortune to gaze upon a set of four eggs of the Golden Eagle which Nelson Carpenter and his brother had removed from a nest that day. Undoubtedly one of them was an infertile egg, however, which may have been in the nest since the preceding year, although this hardly seems possible.

In 1925, in Santa Clara County, not far from Stanford University, I had the unusual good fortune to gaze into the nest of a White-tailed Kite *(Elanus leucurus)*. This nest was unusual for two reasons: first, it was placed 75 feet up in the very tip-top branches of a Monterey pine; and second, it contained a most beautiful set of six eggs. According to Mr. Chase Littlejohn this pair of birds has nested in the same locality for the past thirty or more years; and in spite of the fact that houses are being built up all about them of late years, they continue to raise their young in the same location.

This past spring, in conjunction with Lawrence Stevens, who received his early field training under William Leon Dawson, I spent considerable time investigating the nests of our common Western Red-tailed Hawk *(Buteo borealis calurus)*. We found them plentiful in Santa Barbara County, and particularly so in the Las Cruces, Santa Ynez and Lompoc districts. We located some thirty-eight occupied nests in the limited amount of time we had available. Of this number ten contained incomplete sets of eggs, eight contained complete sets of two, two contained four each, sixteen three each and two contained *five* each. One of these sets was quite plainly marked, while the other was uniformly and beautifully marked. These two sets of five were collected, and one of them now rests in my collection. All five eggs of the set I collected were fertile, incubation about a week along. Both sets were collected on the one day, March 4, 1928, near the Santa Ynez river in Santa Barbara County, California. Last year Stevens located no less than four nests containing four eggs each, which in itself constitutes a record of note.—DUDLEY S. DEGROOT, *Menlo Junior College, Menlo Park, California, July 25, 1928.*

Additional Notes on the Birds of the Gold Lake Region, Northern Sierra Nevada.—Miss Margaret W. Wythe has published (CONDOR, XXIX, 1927, p. 61) an interesting record of "Some Birds of the Gold Lake District of the Sierra Nevada, California." It was my privilege to spend a week (July 27 to August 3) in the same region at the close of this past summer's nesting season, when families probably reared at a lower elevation were numerous. Only one nest was found, that of a Mountain Chickadee which was feeding young in a safe retreat above the ceiling of the shower-bath building at Gold Lake Lodge. Most of the birds were flying freely, associated in family groups; but on August 1, small flocks of Pine Siskins and Chipping Sparrows were seen.

Owing to the light snow-fall of 1927-28, water was less abundant than usual. This fact may account for the crowding of birds into the meadow association where there was still a trickle of water and plenty of cover for young birds.

Of the birds listed by Miss Wythe, I failed to find the Sierra Grouse, Modoc Woodpecker, Sierra Red-breasted Sapsucker, California Evening Grosbeak, California Pine Grosbeak, Townsend Solitaire, American Dipper, and Russet-backed Thrush. On the other hand, Calliope Hummingbirds, White-headed Woodpeckers, Western Wood Pewees, Cassin Purple Finches, Pine Siskins, Chipping Sparrows, Sierra Juncos, Fox Sparrows, White-crowned Sparrows, Green-tailed Towhees, Western Tanagers, Calaveras, Pileolated, Tolmie, Audubon and Lutescent warblers, Sierra Creepers, Canada Nuthatches, and Western Robins were abundant. Warbling Vireos were numerous and still in song, but Cassin Vireos were silent and difficult to find. Several families of Lincoln Sparrows were seen and the song was heard once. Each evening

a Pacific Nighthawk circled over the camp, and at dawn on July 31 and August 1 a Great-horned Owl called repeatedly. The Sierra Hermit Thrush sang the first two days in the forest near the camp and was seen on August 2 feeding upon the fallen buds of red firs. A family of Blue-fronted Jays kept close watch of each camp ground, and Spotted Sandpipers and Mountain Quail were found on the shore of Gold Lake.

Slender-billed Nuthatches were seen but once (near Lake Center Camp). Ruby-crowned Kinglets and Hermit Warblers were identified only by the songs which were heard on July 30. The chattering call of the kinglet which is such a common note in the bay region in the winter season was not heard; which raises the question whether this note is used in summer territory.

My record of birds seen during the week included the following species which were not listed by Miss Wythe during her June and July visits:

Western Red-tailed Hawk *(Buteo borealis calurus)*, found on the summit of the divide between the Feather and Yuba rivers.

Sparrow Hawk *(Falco sparverius)*, on the same divide and also near the north shore of Gold Lake.

Vaux Swift *(Chaetura vauxi)*, on the north shore of Gold Lake associated with Violet-green Swallows.

Traill Flycatcher *(Empidonax traillii)*. One silent bird was seen in the top of a willow on the edge of a meadow; another near the shore of Gold Lake gave the call note.

Hammond Flycatcher *(Empidonax hammondii)*, a family found first in young red firs soon disappeared in the thick branches of a tall tree.

Wright Flycatcher *(Empidonax wrightii)*. A large group of these flycatchers was encountered on the edge of a dry slope on the divide between Frazier and Bear creeks. The shrubs in which they were perched were thrifty at the tops but had many dead branches which ran out almost horizontally a few inches above the ground. From these low branches the birds flew out or dropped to the ground to pick up insects in the grass.

Violet-green Swallow *(Tachycineta thalassina lepida)*. A flock of white-bellied swallows was seen in the distance over Bear Creek on July 28. On Gold Lake the next day violet-greens were identified.

Clark Nutcracker *(Nucifraga columbiana)*. A few came into the top of a red fir near camp on August 1 and 2.

Western House Wren *(Troglodytes aëdon parkmanii)*. The scolding chatter of a wren was heard in meadow or riparian brush on four different occasions. The bird was seen but once.

Golden-crowned Kinglet *(Regulus satrapa olivaceus)*. A family of these tiny mites was associated with the Hammond Flycatchers seen on August 1 and was heard high up in the firs on other dates.

Lutescent Warbler *(Vermivora celata lutescens)*. A Lutescent Warbler came to bathe in a pool at my feet on July 30. They were abundant in the meadows.

Yellow Warbler *(Dendroica aestiva)*. On August 1 several Yellow Warblers were singing near the shore of Gold Lake.

Tolmie Warbler *(Oporornis tolmiei)*. Both old and young Tolmies were abundant in the willows and a few were seen in the chaparral above Bear Lake. One family of smaller young was being fed in a group of small lodge-pole pines near Lake Center Camp. The male was still singing.

Sierra Crossbill *(Loxia curvirostra bendirei)*. The loud calls of these birds directed my attention to a small flock which alighted among the cones at the tip of a large red fir. They were seen on August 1 and 2.—AMELIA S. ALLEN, *Berkeley, California, August 12, 1928.*

***Observations on* the Feeding Habits of Some Common Birds.**—As published accounts of observations upon the feeding habits of our native birds are none too plentiful, the following may be of interest. On the morning of March 25, 1927, in Balboa Park, San Diego, California, I watched a flock of Cedar Waxwings *(Bombycilla cedrorum)* and several male Arizona Hooded and Bullock orioles *(Icterus cucullatus nelsoni* and *I. bullocki)* feeding from the very heart of the flowers of the blue gum *(Eucalyptus globulus)*. These birds were all feeding alike, thrusting the bill deep

into the heart of the flower and holding it there as though sipping nectar. On May 16 of the same year I again saw the Arizona Hooded Orioles feeding from the eucalyptus flowers, and without doubt they were sipping nectar. None of the flowers examined contained any insects. On August 9, 1928, at San Diego, I watched a male Arizona Hooded Oriole probing the tubular flowers of the Cape honeysuckle *(Tecomaria capensis)*. The actions of these birds in feeding were precisely the same as those of two captive Arizona Hooded Orioles which I observed sipping the juice from grapes. The flowers of both the blue gum and the Cape honeysuckle are favorites of the Anna Hummingbird *(Calypte anna)*.

On April 5, 1928, at Pensacola, Florida, I observed several Palm Warblers *(Dendroica palmarum* subsp.*)* sipping the nectar of the flowers of the common hawthorne *(Crataegus)* of that region. These flowers were also examined for insects; honey bees *(Apis mellifica)*, only, were found and they were visiting the flowers in large numbers.

On August 23, 1927, and on several subsequent occasions, in Balboa Park, San Diego, California, I watched a Black Phoebe *(Sayornis nigricans)* feeding on the berries of the lantana. The phoebe would hover in front of the bush and pick a berry or two, would fly back a few feet and settle to the ground for a few moments, and then would repeat the performance. On September 21, 1927, in San Diego, I again saw a Black Phoebe feeding on berries, this time on the orange-colored fruit of an ornamental shrub which I could not identify.

On August 31, 1927, at San Diego, I saw two Pallid Wren-tits *(Chamaea fasciata henshawi)* feeding on the green berries of the laurel sumac *(Rhus laurina)*. In banding birds I have three times trapped this last species with a bait of seeds and grain. In 1924, I watched a captive wren-tit which lived for several months in a cage of sparrows and finches and fed freely on the seeds and grain supplied to those birds.—FRANK F. GANDER, *O'Rourke Zoological Institute, Balboa Park, San Diego, California, September 6, 1928.*

EDITORIAL NOTES AND NEWS

Again this year we are indebted to outside aid in certain of our editorial chores. In providing the index to the current volume of THE CONDOR, Mrs. Amelia S. Allen prepared the entire manuscript copy—an arduous labor, as those who have done similar work will understand.

Owing to the transfer of his center of activity away from the editorial offices of THE CONDOR, Mr. Harry S. Swarth, our Associate Editor of long and appreciated service, finds himself unable longer to function in that capacity. Mr. Jean M. Linsdale, of the Museum of Vertebrate Zoology, who has already served an unrecognized apprenticeship on the editorial staff, has been asked to accept the Associate Editorship of THE CONDOR for the coming year.

Ornithological activity in Arizona centers in Tucson, where the thriving Tucson Natural History Society is located. Under its auspices a series of "bird observation trips" is conducted, with Messrs. Charles T. Vorhies and Walter P. Taylor as leaders. Mr. Taylor in his field work in connection with the work of the United States Biological Survey is constantly on the lookout for significant relationships of birds to their forest and range environments. Mr. Vorhies has recently published a thoughtful contribution to the current discussion of the "southwestern quail and water" question, in the *American Naturalist* (vol. 52, 1928, pp. 446-452).

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

JULY.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held in Room 101, Zoology Building, University of California, on July 26, 1928, at 8:00 p. m., with twenty members and visitors present. In the absence of president and vice-president, Mr. C. B. Lastreto occupied the chair. Minutes of the Northern Division for June were read and approved. June minutes of the Southern Division were read.

Mr. Hansen and Mr. Drew reported

Purple Martins among birds seen while encamped with boy scouts near Cazadero. Two natural history books of unusual interest were reviewed, Mr. Grinnell calling attention to "Forest, Steppe and Tundra," by Maud Haviland, while Mr. Swarth spoke of Theodore Pleske's "Birds of the Eurasian Tundra."

The evening's program was given by Mr. Earl C. O'Roke, of the State Fish and Game Division, who told of his study of parasitised California Quail. Although many species of birds had been examined by Mr. O'Roke only the quail have as yet been found to harbor haemoprotean parasites. These have been found not only in California Quail raised at the Game Farm but also among wild birds. The extent and severity of the infection and the question as to whether the parasite is a native form or an introduced species are problems which cannot be solved until the preliminary investigations have been followed by much further study.

Adjourned.—HILDA W. GRINNELL, *Secretary.*

AUGUST.—The Northern Division of the Cooper Ornithological Club held its regular monthly meeting on Thursday, August 23, 1928, at 8:00 p. m., in Room 101, Zoology Building, University of California, with about 120 members and guests present. Mr. C. B. Lastreto served as chairman of the evening. The name of Miss Julia E. Harbison of Vacaville, California, was proposed for membership by J. Grinnell.

Mr. Bunker reported upon unusual occurrences of the Brewer Blackbird and the Red Phalarope. Mr. Mailliard stated he had often in past summers thought that he recognized the call of the Pileated Woodpecker in the Bohemian Grove, Sonoma County, and that in the summer of 1927 he had seen the bird, as also again this summer; in these last two summers Purple Martins had been there.

Dr. Bryant contributed notes on late summer occurrences in the Yosemite, stating that he had found Brewer Blackbirds feeding near a glacier at 12,000 feet altitude, a Mourning Dove near Booth Lake, 10,000 feet altitude, and Gnatcatchers and Bush-tits foraging in the Little Yosemite. Mr. Swarth announced that he had recently been shown a living pair of the rare and beautiful Mikado Pheasants by a Japanese bird dealer of San Francisco.

The evening's talk was given by Mr. Joseph Grinnell who described three camp sites on Eagle Lake, which he had visited during June of this year. One site was located in the green vegetation at the westerly end of the lake, the next at the point where the gray vegetation of the less humid region to the east begins to make its appearance, while the third camp, although close to the lake's edge, was among junipers and sage-brush. Mr. Grinnell showed upon the blackboard parallel columns listing the birds seen at each camp and suggested reasons accounting for the presence or absence of each species. The evening closed with an informal discussion of the problems presented.

Adjourned.—HILDA W. GRINNELL, *Secretary.*

SOUTHERN DIVISION

SEPTEMBER.—The Southern Division of the Cooper Ornithological Club held its monthly meeting at the Los Angeles Museum, Exposition Park, Los Angeles, on September 14, 1928, at 8 p. m., with 45 members and friends present and Vice-President Harris presiding. The minutes of the June meeting of the Southern Division were read and approved. The minutes of the July and August meetings of the Northern Division were read by title only.

The membership application of Mr. George Byron Deshler, 2327 Bancroft Way, Berkeley, Calif., proposed by John McB. Robertson, was read.

Mr. M. P. Skinner, who has been a student of natural history in the Yellowstone National Park for many years, was a speaker of the evening. He began his talk by reviewing the geography of that Park, which is truly the top of the continent in so far as it is the source of so many important rivers that flow in almost all directions from it. It also is traversed by many important migration routes of birds. These were described by Mr. Skinner, who pointed out many interesting features in regard to them. The habits and migration movements of many birds were described and beautiful lantern slides showed the various types of country to be found in the Park and the birds that occupied them. That the talk was of great interest was shown by the large number who lingered to talk with Mr. Skinner after adjournment. — HAROLD MICHENER, *Secretary.*

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